

IN THE SPECIFICATION:

Delete the paragraph [0007] and replace it with the following new paragraph:

[0007] During use, the heater heats the collector at least when the collector receives substantially no radiation from the first radiation source. Therefore, temperature variations of the collector can be diminished or prevented. Preferably, the temperature of the collector is kept substantially constant by using the heater, or, for instance, within a ~~certain~~ relatively small range. The small temperature range may comprise small offsets from a ~~certain~~ desired operating temperature. Such temperature range may be, for example, a range of plus and minus about 50⁰ C from a ~~certain~~ an average operating temperature. As a result, the dimensions or the shape of the collector can be kept relatively constant or within certain limits, so that the radiation may be transmitted in a desired direction and/or focussed onto a desired spot. Thus, a radiation beam with desired, substantially constant, optical characteristics can be provided. Such radiation beam can be advantageously used in the manufacturing of devices.

Delete the paragraph [0048] and replace it with the following new paragraph:

[0048] Figure 5 shows a first embodiment of a collector 1 according to the present invention, which can be used in the lithographic apparatus shown in fig. 1. A number of heaters 2 are provided for heating the collector 1. In the present embodiment, each heater 2 comprises a second radiation source ~~[[2]]~~ 2a. The heaters 2 are arranged to supply heat to the outer surfaces 14 of the reflecting elements 11 by heat radiation. The heaters 2 are preferably located substantially out of the path of the radiation R which is to be focussed by the collector 1 onto the focussing point FP, to prevent the heaters 2 from blocking the transmission of that radiating R. The heaters 2 may comprise different radiation sources, for instance X-ray sources, infrared light sources, lamps and/or other radiation sources. To absorb heat from the heaters 2, the outer surfaces 14 of the collector shells 11 preferably comprise a heat absorbing material, a heat absorbing coating, for instance a dark or substantially black coating, a heat absorbing structure and/or the like.

Delete the paragraph [0049] and replace it with the following new paragraph:

[0049] The heaters 2 are arranged to heat the collector 1 when the collector 1 receives substantially no radiation from the first radiation source SO. The heaters 2 may also be arranged for heating the collector 1 when the collector 1 receives radiation R from the first radiation source SO. Preferably, the heaters 2 are arranged for maintaining the collector 1 at a certain substantially constant operating temperature, particularly before, during as well as after the use of the first radiation source SO. The heaters may be arranged, for example, to maintain the operating temperature within a range of plus and minus about 50⁰ C from ~~a certain~~ an average operating temperature, and preferably within a range of plus and minus about 25⁰ C from ~~a certain~~ an average operating temperature. Depending on the arrangement, composition and/or structure of the collector 1, the heaters 2 may be arranged to maintain the operating temperature within different temperature ranges, for instance smaller or larger temperature ranges.

Delete the paragraph [0054] and replace it with the following new paragraph:

[0054] For providing the projection beam PB, the first radiation source is a intermittent source which, for instance, is arranged to produces radiation pulses. The radiation R, generated by the first intermittent radiation source SO, is collected by the collector 1, to be transmitted to the illumination system IL. The collector 1 is maintained at a substantially constant operating temperature by heating the collector 1, using the heaters 2. The collector 1 may be heated substantially only by the heaters 2 when the collector 1 receives substantially no radiation from the first radiation source SO, such that the operating temperature is maintained substantially constant. The temperature of the collector 1 may be maintained, for instance, within a range of plus and minus about 50⁰ C from ~~a certain~~ an average operating temperature, and preferably within a range of plus and minus about 25⁰ C from ~~a certain~~ an average operating temperature, or within a smaller or larger range.

Delete the paragraph [0055] and replace it with the following new paragraph:

[0055] On the other hand, the heaters 2 may heat the collector 1 continuously to such a high operating temperature, that a further heating, which may be caused by absorption of radiation from the first radiation source SO, leads to substantially no or only a small change of the temperature of the collector 1. In this case, the additional heat load, resulting from the radiation R of the first radiation source SO, leads to substantially no or only a small rise of the temperature of the collector 1 with respect to a temperature rise which would occur when the heaters 2 were not implemented. This can also be explained as follows. Radiative thermal transport scales with T^4 (wherein T is the temperature in Kelvin). The temperature rise per unit of absorbed power thus scales with T^{-3} . Consequently, it is for example found that the temperature rise of a collector 1 at 500 K is $27/125=0.2$ times smaller than the temperature rise of a collector 1 at 300 K, for a similar heat input from the source. Thus, it has been found that is advantageous to heat the collector 1 continuously for obtaining a rather constant operating temperature thereof. Also in this case, the temperature of the collector 1 may be maintained, for instance, within a ~~certain~~ range from a ~~certain~~ an average operating temperature.

Delete the paragraph [0070] and replace it with the following new paragraph:

[0056] Besides, the term "a substantial constant operating temperature" may at least be understood as a temperature within a range of plus and minus about 50^0 C from a ~~certain~~ an average collector operating temperature, and preferably within a range of plus and minus about 25^0 C from a ~~certain~~ an average operating temperature, or within a smaller range. Herein, the term "average" should be understood as being average concerning the overall collector structure. For instance, different collector parts may have different substantially constant operating temperatures.